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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/680,469 | 10/06/2000 | Hitoshi Matsui | Q61083 | 8771 |
| 7590 | 09/29/2004 | | EXAMINER | |
| Sughrue Mion Zinn Macpeak & Seas 2100 Pennsylvania Avenue NW Washington, DC 20037-3202 | | | | ZHENG, EVA Y |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2634 | |

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | |
|-----------------|-----------------|
| Application No. | MATSUI, HITOSHI |
| Examiner | Art Unit |
| Eva Yi Zheng | 2634 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 7/26/04.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. _____.
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. 5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 2, 5, and 6, recitation: "the largest amplitudes in delayed wave component sequences" is written unclearly since there's only one largest amplitude in component sequences.

Examiner suggests: "the largest amplitudes in each delayed wave component sequences".

4. Claim 2 recites the limitation "from the new combined impulse response sequence" on line 12. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 2 recites the limitation "the timing signal output from said estimation region detector" on line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Okanoue (US 5,127,025).

a) Regarding claim 1, Okanoue discloses a delayed decision feedback sequence estimation diversity receiver comprising:

means for extracting a plurality of reception signals by using a plurality of antennas (10a and 10b in Fig. 1) when estimating a transmission signal from reception signals having undergone transmission path distortion;

means for combining impulse response sequences in transmission paths while canceling delayed wave components having the largest amplitudes in delayed wave component sequences in impulse response sequences in the respective transmission paths (15a, 15b, 16a, 16b, 17a, 17b, 20 in Fig. 1; Col 3, L 7-32); and

means for performing signal estimation on the basis of a new impulse response sequence generated by combining the impulse response sequences (23 in Fig. 1).

b) Regarding claim 6, Okanoue discloses a delayed decision feedback sequence estimation method comprising:

extracting a plurality of reception signals by using a plurality of antennas (10a and 10b in Fig. 1) when estimating a transmission signal from reception signals having undergone transmission path distortion;

combining impulse response sequences in transmission paths while canceling delayed wave components having the largest amplitudes in delayed wave component sequences in impulse response sequences in the respective transmission paths (15a, 15b, 16a, 16b, 17a, 17b, 20 in Fig. 1; Col 3, L 7-32); and

performing signal estimation on the basis of a new impulse response sequence generated by combining the impulse response sequences (23 in Fig. 1).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121
Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application
or proceeding should be directed to the Technology Center 2600 Customer
Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

September 21, 2004



SHUWANG LIU
PRIMARY EXAMINER